Venue™ Series

SUB12

Amplifier/Subwoofer

SERVICE MANUAL

JBL Consumer Products
250 Crossways Park Dr.
Woodbury, New York 11797

Rev0 7/2006

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BASIC SPECIFICATIONS

SUB12 Subwoofer

Frequency response:	25Hz – 150Hz
Amplifier Power output:	250W Continuous RMS power
Amplifier Peak Dynamic Power†:	500W
Crossover Frequencies	50Hz – 150Hz, 24dB/octave, continuously variable
Woofer:	12" (305mm) PolyPlas™ cone
Dimensions (including grille):	19-3/4" x 14-3/8" x 18" (502mm x 365mm x 457mm)
Weight:	39.5 lb/18kg

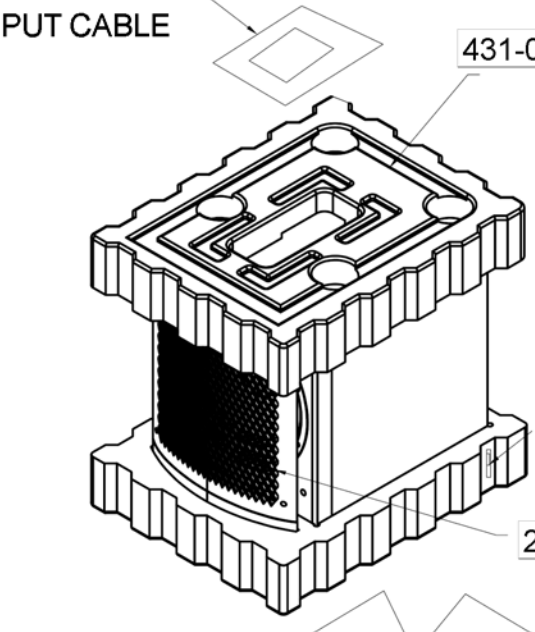
† The Peak Dynamic Power is measured by recording the highest center-to-peak voltage measured across the output of a resistive load equal to minimum impedance of the transducer, using a 50Hz sine wave burst, 3 cycles on, 17 cycles off.

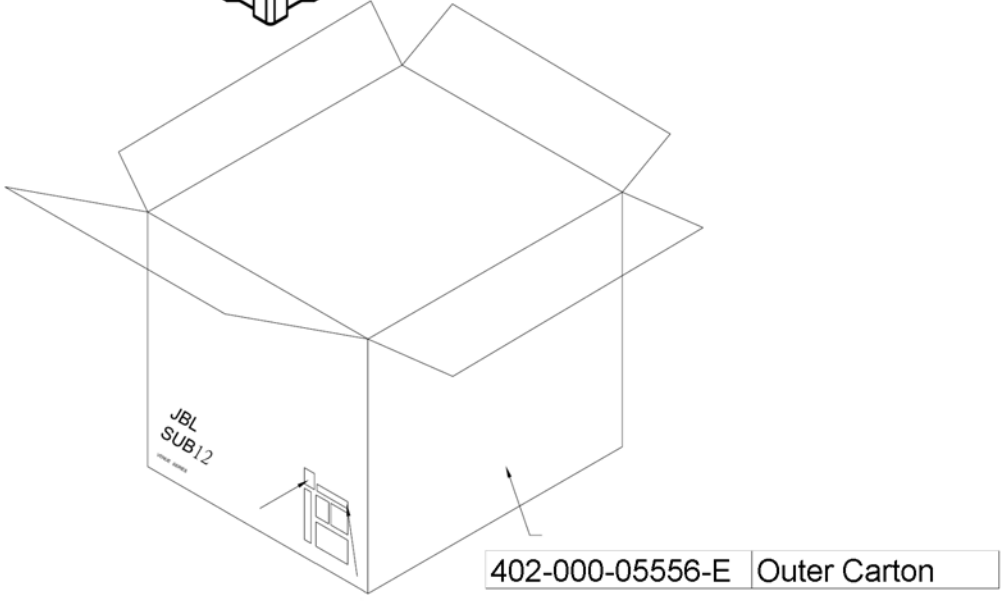
Occasional refinements may be made to existing products without notice but will always meet or exceed original specifications unless otherwise stated

SUB12 PACKAGE

406-000-05452-E	Owner's Manual
405-000-05122-E	Warranty Card

166-015F011-E RCA INPUT CABLE



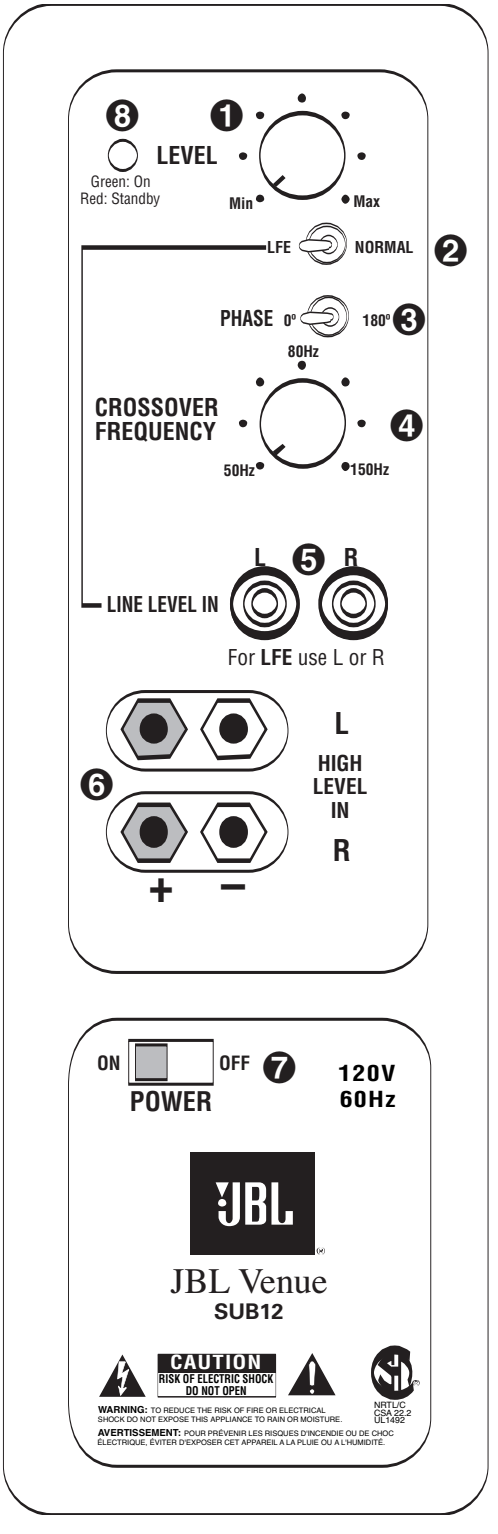


VENUE SUB12	150W Powered Sub/ Plate Amp				
LINE VOLTAGE	**Yes/No**	**Hi/Lo Line**	**Nom.**	**Unit**	**Notes**
US 120vac/60Hz	Yes	108-132	120	Vrms	Normal Operation
EU 230vac/50-60Hz	Yes	207-264	230	Vrms	Normal operation, MOMS required
Parameter	**Specification**	**Unit**	**QA Test Limits**	**Conditions**	**Notes**
Amp Section					
Type (Class AB, D, other)	D	n/a	n/a		
Rated Output Power (120VAC)	150	Watts	140		Domestic version only 120 VAC-60 Hz
Rated Output Power (230VAC)	150	Watts	130		EU Version only 230 VAC-50 Hz
AVG RMS Dynamic Power	250	Watts	225		Average RMS power, 3/20 Cycles 50 Hz, Driven 6dB above its input sensitivity sensitivity
THD @ Rated Power	0.3	%	1	22k filter	145 Watts
THD @ 1 Watt	0.1	%	0.5	22k filter	
DC Offset	10	mV-DC	30	@ Speaker Outputs	
Damping factor	>50	DF	35	Measured at amplifier board	Measured at the speaker cable. 150 Watts @ THD < 0.1 % @ 50 Hz
Input Sensitivity					
Input Frequency	50	Hz	50	Nominal Freq.	
L&R	240	mVrms	±2dB	To 150 Watts	Single input driven
LFE input	240	mVrms	±2dB	To 150 Watts	Single input driven, LFE switch ON
Speaker/Hi Level Input	2.4	Vrms	±2dB	To 150 Watts	Single input driven
Signal to Noise					
SNR-A-Weighted	90	dBA	70	relative to rated power	A-Weighting filter
SNR-unweighted	85	dBr	70	relative to rated power	22k filter
SNR rel. 1W-unweighted	65	dBr	60	relative to 1W Output	22k filter
Residual Noise Floor	1	mVrms	2	Volume @max, using RMS reading DMM/VOM (or A/P) BW=20 Khz.	Line level inputs must be terminated using 1KOHM
Residual Noise Floor	1.5	mVrms(max)	2	Volume @max, w/ A/P Swept Bandpass Measurement (Line freq.+ harmonics) (BW=20 Khz)	Line level inputs must be terminated using 1KOHM
Input Impedance					
Line Input (L, R,LFE)	10K	ohms	n/a	Nominal	
Speaker/Hi Level Input	> 4.7K	ohms	n/a	Nominal	
Filters					
LP filter 4th order fixed	60-180	Hz	± 10		See AP curves 2nd order variable + 2nd order fix-24 db/Octave
Subsonic filter (HPF) 3rd Order	Fixed				
LFE Low pass 2nd order	200>LP<1K	Hz		LFE input driven only	
HP speaker out connector	200	Hz	± 10	Speaker input driven - Speaker out loaded with 4 Ohms	(Applies only to 230V Model)
Note: 120V Models do not have speaker output	100	Hz	± 10	Speaker input driven - Speaker out loaded with 8 Ohms	(Applies only to 230V Model)
Limiter					
THD at Max. Output Power	n/a	n/a	functional	Maximum Output Power	Maximum THD as a result of limiting.
Features	--				
Volume pot Taper (lin/log)	LOG	--	functional		A Taper
HP Speaker out	230v version		functional		Refer to Filter section
Phase switch	0-180	deg	functional		
LP Filter defeat switch	YES		functional		Disables LP filter, intended for LFE
Input Configuration					
Line In (L,R) & LFE	YES	--	functional		Dual RCA jack
Spkr/Hi Level In	YES	--	functional		Binding post connector L&R
Signal Sensing (ATO)					
Auto-Turn-On (yes/no)	YES		functional		
ATO Input test frequency	50	Hz	functional		
ATO Level LFE Input	4	mV	functional		Maximum acceptable level.
ATO Level Speaker in	50	mV	functional		Maximum acceptable level.
ATO Turn-on time	5	ms	functional	Amp connected and AC on, then input signal applied	
Auto Mute/ Turn-OFF Time	15	minutes	15	T before muting, after signal is removed	Auto turn of time (T) must be 5 > T < 15 Minutes
Power on Delay time	3	sec.	4	AC Power Applied	

Parameter	Specification	Unit	QA Test Limits	Conditions	Notes
Transients/Pops					
ATO Transient	5	mV-peak	n/a	@ Speaker Outputs	
Turn-on Transient	50	mV-peak	2v-pp	@ Speaker Outputs	AC Line cycled from OFF to ON
Turn-off Transient	50	mV-peak	2v-pp	@ Speaker Outputs	AC Line cycled from ON to OFF
Efficiency					
Efficiency	65	%	64		Nominal Line voltage 120 VAC
Stand-by Input Power	24	Watts	26	@ nom. line voltage	Maximum allowable input power under nominal Input voltage and frequency, HOT or COLD operation.
Power Cons. @ rated power	234	Watts	240	@ nom. line voltage	150 Watts @ 5.6 Ohms nominal line voltage
Protections					
Short Circuit Protection	YES		functional	Direct short at output	Amplifier should resume operation after short circuit condition removal
Thermal Protection	YES		functional	@1/8 max unclipped Power at 1.06 times the input voltage	Temperature rise in accessible metal parts should not exceed 35K rise for domestic version or 30K rise for European versions (refer to requirements sheet).
DC Offset Protection	YES		-	DC present at Speaker Out leads	Design must insure no Offset at the speaker output under any operating condition including abnormal operation
Line Fuse Rating					
USA-Domestic	2	Amps	2	Type-T or Slo Blo-250 V	Internal fuse with UL/SEMKO rated holder
EU	1.25	Amps	1.25	Type-T or Slo Blo-250 V, Low Breaking capacity	Internal fuse with UL/SEMKO rated holder

Controls and Connections

Rear Panel



❶ Subwoofer-Level Control

❷ LFE/Normal Selector

❸ Phase Switch

❹ Crossover Adjustment

❺ Line-Level/LFE Input

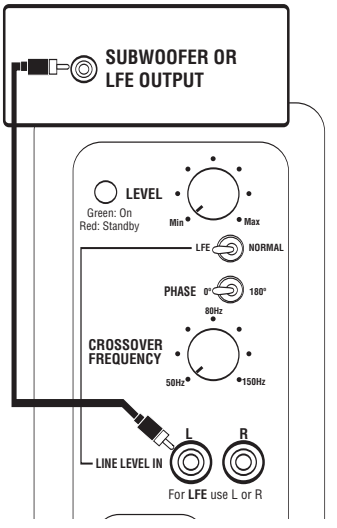
❻ High (Speaker)-Level Inputs

❼ Power Switch

❽ Status LED

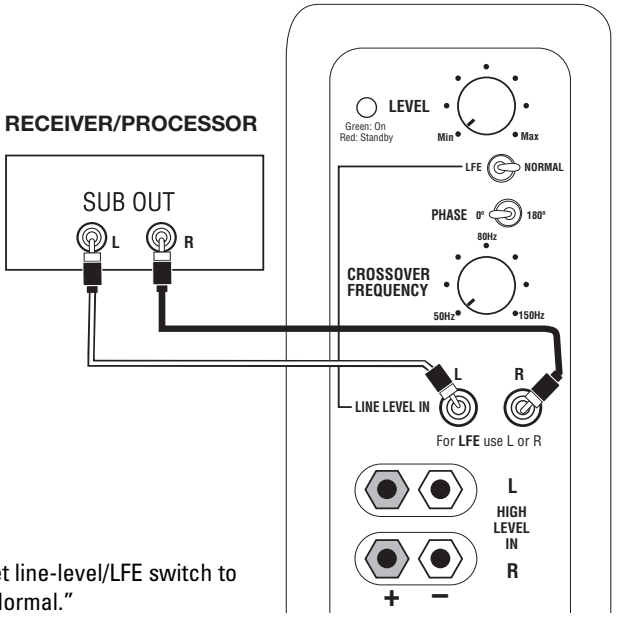
SYSTEM CONNECTIONS

If you have a Dolby® Digital or DTS® receiver/processor with a low-frequency-effects (LFE) or subwoofer output:



Set LFE/Normal switch to "LFE."

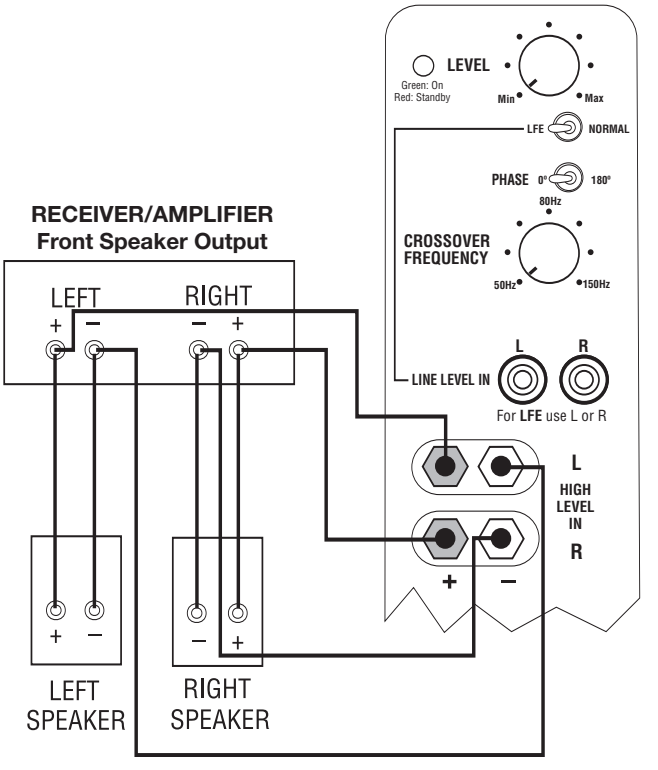
If your receiver/processor does not contain a Dolby Digital or DTS processor, but has subwoofer outputs:

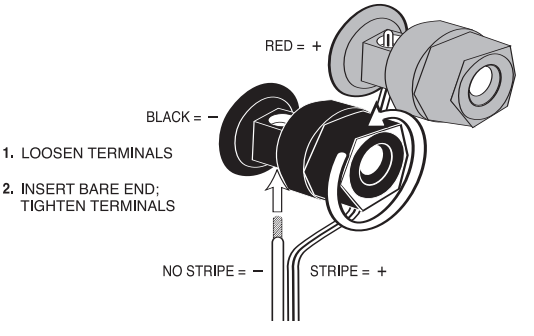


Set line-level/LFE switch to "Normal."

NOTE: If your receiver/processor has only one sub out, you may use either the L or R input.

If your receiver/processor does not have subwoofer outputs for the left and right channels or an LFE output, connect speaker wire from your receiver/amplifier to your speakers and subwoofer using two sets of speaker wire:





This figure shows how to connect bare wires to the terminals.

OPERATION

Power On

Plug your subwoofer's AC cord into a wall outlet. Do not use the outlets on the back of the receiver.

Initially set the Subwoofer-Level Control ❶ to the "min" position.

Turn on your sub by pressing the Power Switch ❼ on the rear panel.

Turn on your entire audio system and start a CD or movie soundtrack at a moderate level.

Auto On/Standby

With the Power Switch ❼ in the ON position, the Status LED ❽ on the back panel will remain lit in red or green to indicate the On/Standby mode of the subwoofer.

RED = STANDBY (No signal detected, Amp Off)

GREEN = ON (Signal detected, Amp On)

The subwoofer will automatically enter the Standby mode after approximately 10 minutes when no signal is detected from your system. The subwoofer will then power ON instantly when a signal is detected. During periods of normal use, the Power Switch ❼ can be left on. You may turn off the Power Switch ❼ for extended periods of nonoperation, e.g., when you are away on vacation.

Adjust Gain

Turn your Subwoofer-Level Control ❶ up to the halfway position. If no sound emanates from the subwoofer, check the AC-line cord and input cables. Are the connectors on the cables making proper contact? Is the AC plug connected to a "live" receptacle? Has the Power Switch ❼ been pressed to the "On" position? Once you have confirmed that the subwoofer is active, proceed by playing a CD, record or cassette. Use a selection that has ample bass information.

Set the overall volume control of the preamplifier or stereo to a comfortable level. Adjust the Subwoofer-Level Control ❶ until you obtain a pleasing blend of bass. Bass response should not overpower the room but rather be adjusted so there is a harmonious blend across the entire musical range. Many users have a tendency to set the subwoofer volume too loud, adhering to the belief that a subwoofer is there to produce lots of bass. This is not entirely true. A subwoofer is there to enhance bass, extending the response of the entire system so the bass can be felt as well as heard. However, overall balance must be maintained or the music will not sound natural. An experienced listener will set the volume of the subwoofer so its impact on bass response is always there but never obtrusive.

Phase Control

The Phase Switch ❸ determines whether the subwoofer speaker's pistonlike action moves in and out with the main speakers, 0˚, or opposite the main speakers, 180˚. Proper phase adjustment depends on several variables such as room size, subwoofer placement and listener position. Adjust the phase switch to maximize bass output at the listening position.

Crossover Adjustment

The Crossover Adjustment Control ❹ determines the highest frequency at which the subwoofer reproduces sounds. If your main speakers can comfortably reproduce some low-frequency sounds, set this control to a lower frequency setting, between 50Hz and 100Hz. This will concentrate the subwoofer's efforts on the ultradeep bass sounds required by today's films and music. If you are using smaller bookshelf speakers that do not extend to the lower bass frequencies, set the Crossover Adjustment control to a higher setting, between 120Hz and 150Hz.

NOTE: This control will have no effect if the LFE/Normal Selector ❷ is set to LFE. If you have a Dolby Digital or DTS processor/receiver, the Low-Pass Frequency is set by the processor/receiver. Consult your owner's manual to learn how to view or change this setting.

MAINTENANCE AND SERVICE

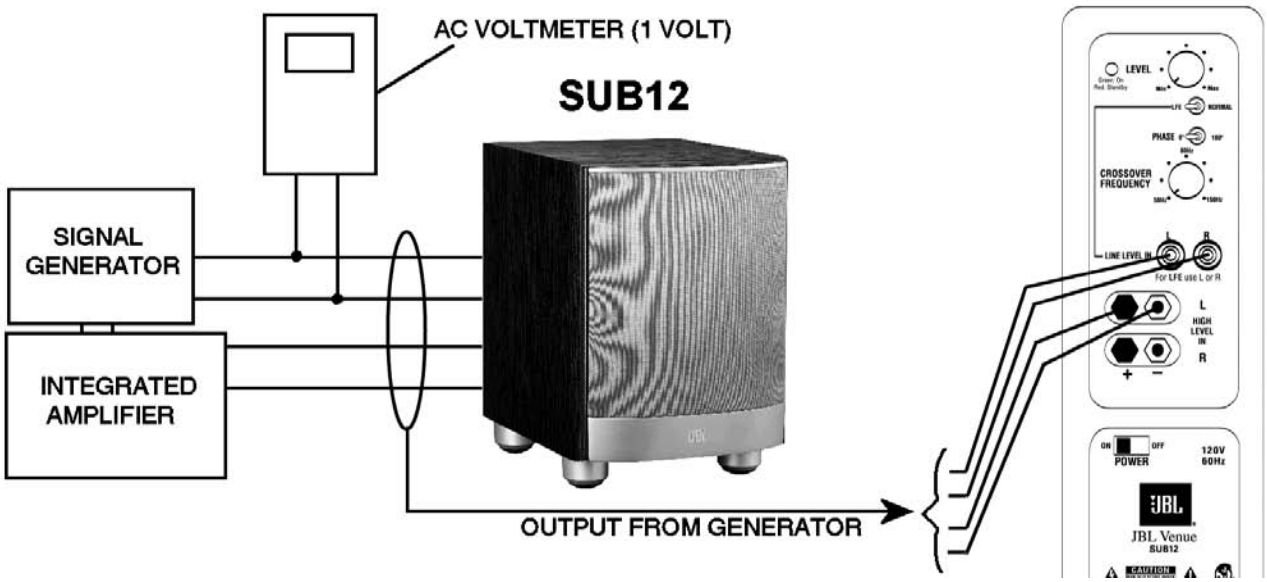
The enclosure may be cleaned using a soft cloth to remove fingerprints or to wipe off dust.

The grille may be gently vacuumed. Stains may be removed with an aerosol cleaner, following its instructions. Do not use any solvents on the grille.

All wiring connections should be inspected and cleaned or remade periodically. The frequency of maintenance depends on the metals involved in the connections, atmospheric conditions and other factors, but once per year is the minimum.

If a problem occurs, make sure that all connections are properly made and clean. If a problem exists in one loudspeaker, reverse the connection wires to the left and right system. If the problem remains in the same speaker, then the fault is with the loudspeaker. If the problem appears in the opposite speaker, the cause is in another component or cable. In the event that your subwoofer ever needs service, contact your local JBL dealer or visit www.jbl.com for a service center near you.

SUB12 Test Set Up and Procedure



Equipment needed:

- Function/signal generator/sweep generator
- Integrated Amplifier
- Multimeter
- Speaker cables

General Unit Function (UUT = Unit Under Test)

1) From the signal generator, connect line level (RCA) cables to the Subwoofer Line Level Input jacks L/R on the UUT. Use a Y-cable from a mono source if necessary to connect to both inputs.
2) Turn the CROSSOVER control to maximum (150).
3) Turn the LEVEL control on the UUT to completely counterclockwise (MIN).
4) Phase switch position = does not matter; LFE/Normal switch should be on NORMAL
5) Turn on generator; adjust to **150mV, 50 Hz**.
6) Plug in UUT; turn the power switch ON. LED should switch from Red to Green.
7) Turn LEVEL control full clockwise (MAX); immediate and vigorous bass response should be heard and felt from port tube opening on the bottom.
8) Turn off generator, turn LEVEL control full counterclockwise (MIN), and disconnect RCA cable.
9) Connect one pair of speaker cables to Speaker Level input terminal (IN) on UUT. Cables should be connected to an integrated amplifier fed by the signal generator.
10) Turn on generator and adjust so that speaker level input at the amplifier is **3.3V, 50 Hz**. Turn LEVEL control full clockwise (MAX).
11) Green LED should light; immediate and vigorous bass response should be heard and felt from the port tube opening.

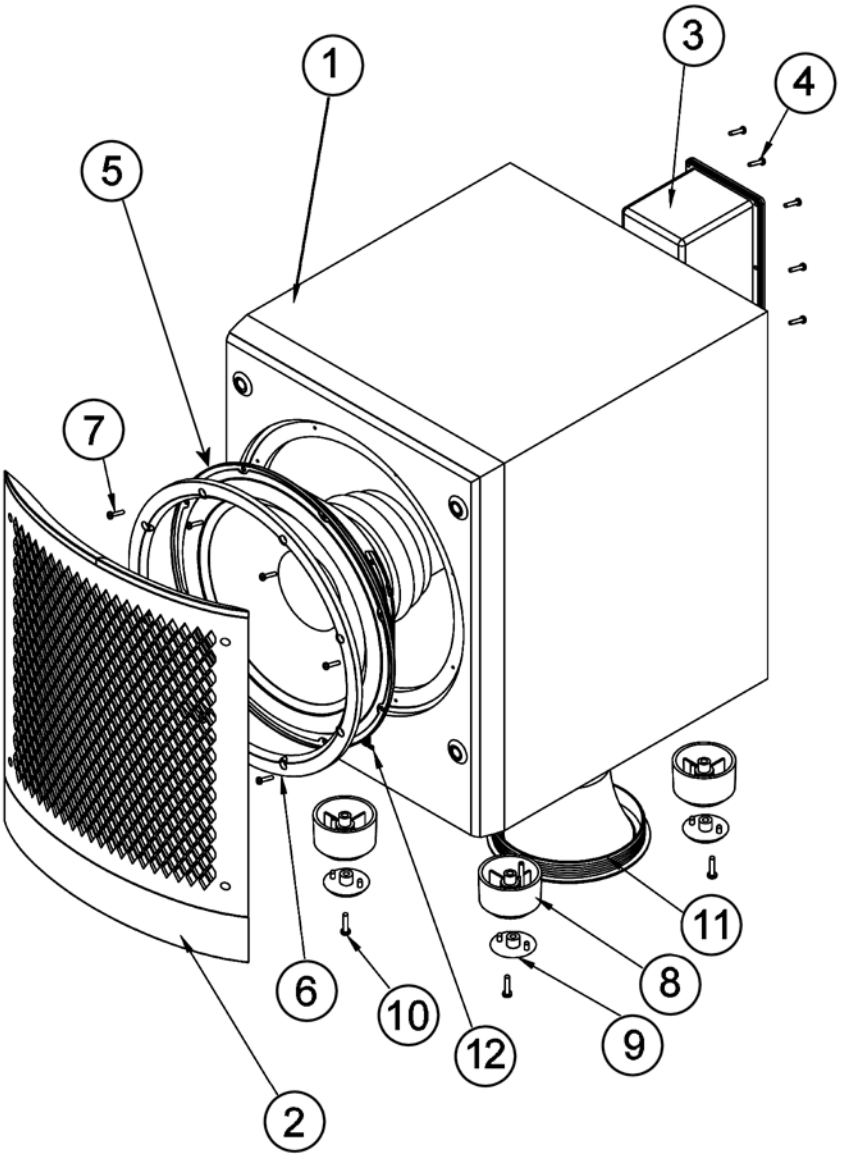
Sweep Function

1) Follow steps 8-10 above, using a sweep generator as a signal source.
2) Sweep generator from 20Hz to 300Hz. Listen to the cabinet and drivers for any rattles, clicks, buzzes or any other noises. If any unusual noises are heard, remove woofers and test.

Driver Function

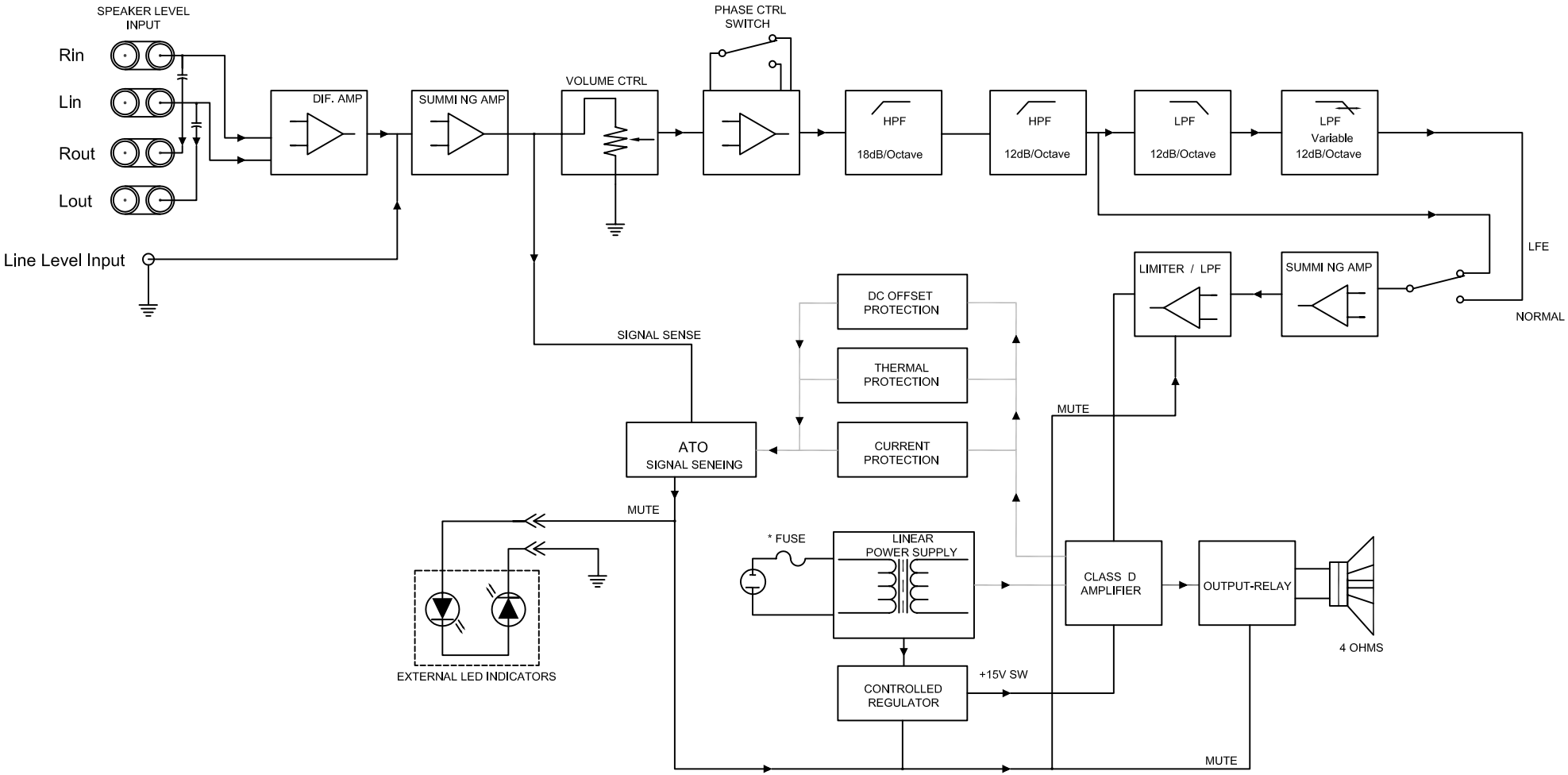
1) Remove woofer from cabinet (instructions on exploded view drawing); detach + and - wire clips.
2) Check DC resistance of woofer; it should be **4.8 ohms** ±10%
3) Connect a pair of speaker cables to driver terminals. Cables should be connected to an integrated amplifier fed by a signal generator. Turn on generator and adjust so that speaker level output is **5.0**V.
4) Sweep generator from 20Hz to 1kHz. Listen to driver for any rubbing, buzzing, or other unusual noises.

SUB12 EXPLODED VIEW



Item	Part Number	Description	Qty
1	Not for Sale	SUB12 Cabinet	1
2	244-120-05182-0VAE	Grille	1
3	Not for Sale	SUB12 Amplifier	1
4	352-AM04020D210-E	Amplifier Screw	10
5	338128-002	12" Woofer	1
6	213-120-05128-0VAE	Trim Ring	1
7	352-KM04016D189-E	Woofer Screw	8
8	321-ABS-00008-0BAE	Foot, Main Body, Plastic	4
9	321-RUB-00009-0BAE	Foot Pad, Rubber	4
10	352-HM04030D500-E	Foot Screw	4
11	249-HIPS-05117-0VAE	Port Tube	1
12	316-CU-05174-0VAE	JBL Logo	1

Venue SUB12



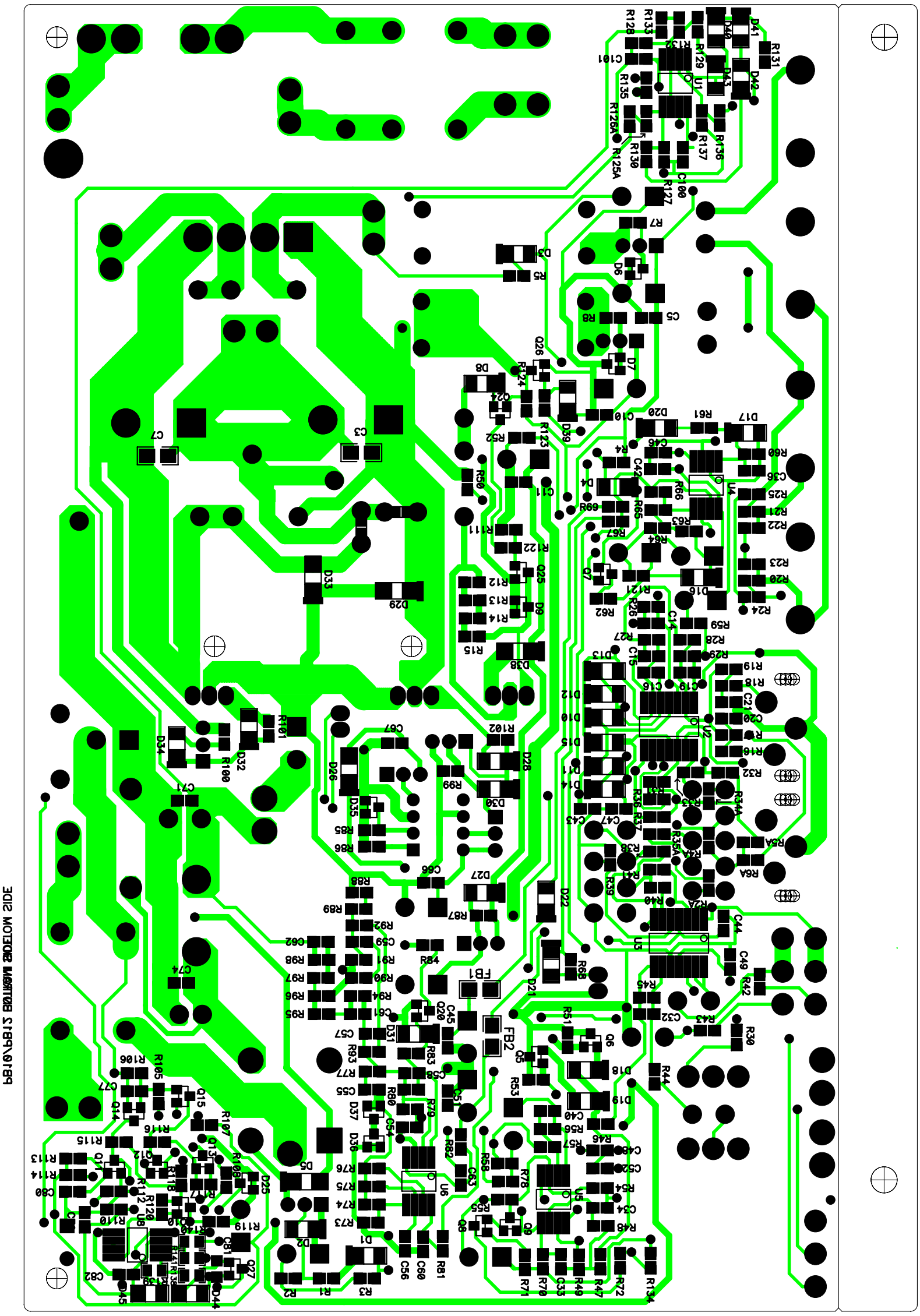
NOTE :
120 VAC T1.25A-250V
230 VAC T0.8A-250V

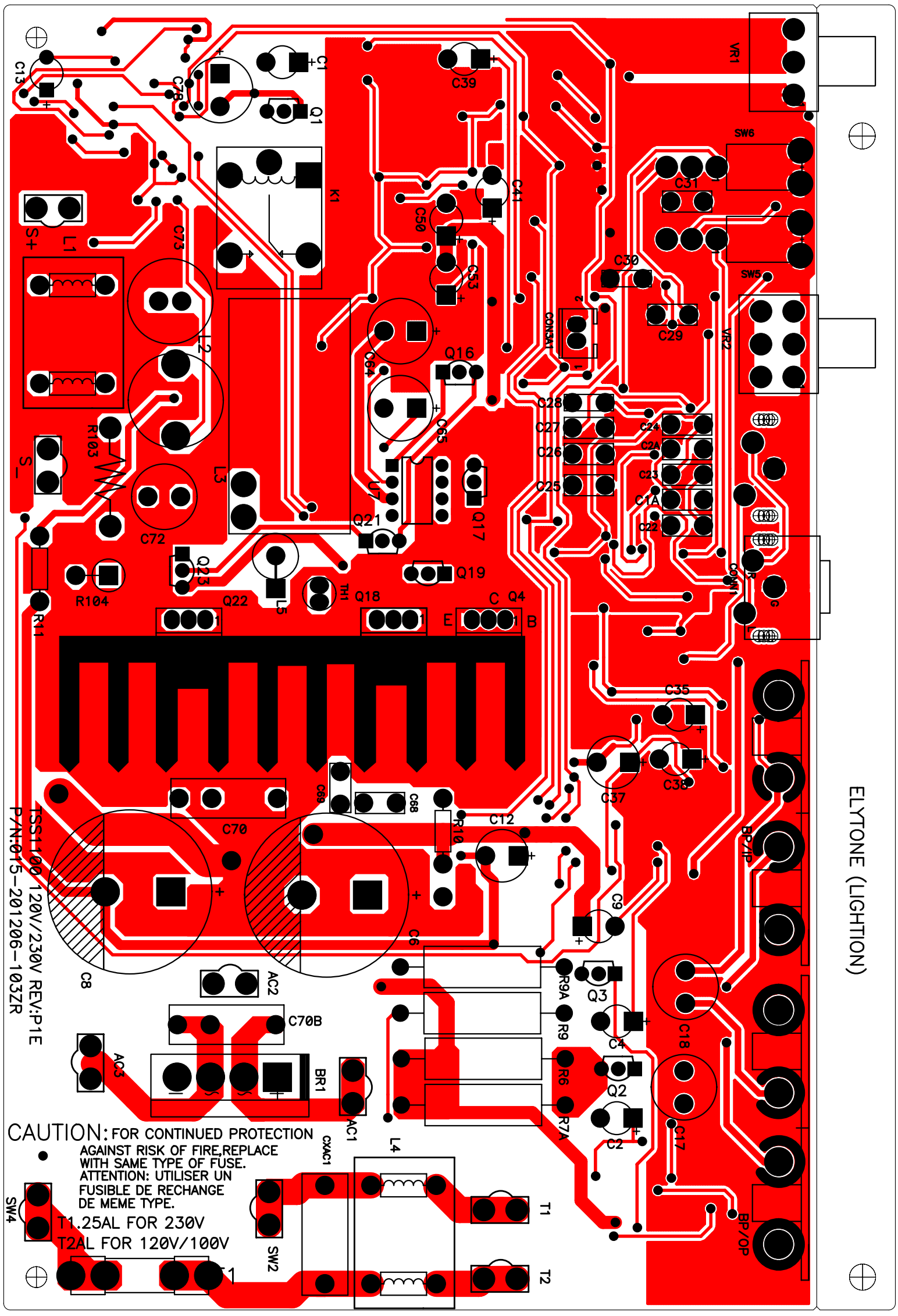
Designed by 製圖	Checked by 檢圖	Approved by 核准	Model No. 型號	Issue No./文件號碼
			PB-10	Date 日期 2002/01/09 / Elytone No. 376
		Title 圖名		客戶名稱 JBL
		Dwg No. 圖號	Edition 版次 01	Sheet 頁次 OF 7

SUB12 120V Electrical parts list				
Part number	**Description**		**Qty**	**Reference Designator**
MAIN/PREAMP PCB				
Resistors				
021-220202-120ZS	MOF resistor	22R 2W(S) J MB TY	1	R10
021-120403-020ZS	GS MOF Resistor	1K2 3WS J 8x20 Kink	1	R9
021-120405-020ZS	GS MOF Resistor	1K2 5WS J 8x25 Kink	1	R6
024-000098-120ZS	GS SMD Resistor	0R 1/8W J 0805	2	R125,126
024-100398-120ZS	GS SMD Resistor	100R 1/8W J 0805	1	R62
024-100598-120ZS	GS SMD Resistor	10K 1/8W J 0805	13	R17,19,37,54,58,63,71,72,111,123,124,20,21
024-100698-120ZS	GS SMD Resistor	100K 1/8W J 0805	4	R22~25
024-100898-120ZS	GS SMD Resistor	10M 1/8W J 0805	1	R121
024-120698-120ZS	GS SMD Resistor	120K 1/8W J 0805	1	R39
024-121598-100ZS	GS SMD Resistor	12K1 1/8W F 0805	1	R38
024-137698-100ZS	GS SMD Resistor	137K 1/8W F 0805	1	R32
024-150498-120ZS	GS SMD Resistor	1K5 1/8W J 0805 T	2	R67,68
024-180598-120ZS	GS SMD Resistor	18K 1/8W J 0805 T	1	R29
024-187698-100ZS	GS SMD Resistor	187K 1/8W F 0805	1	R45
024-220498-121ZS	GS SMD Resistor	2K2 1/8W J 0805 T	1	R61
024-237598-120ZS	GS SMD Resistor	23K7 1/8W F 0805	1	R48
024-243698-100ZS	GS SMD Resistor	243K 1/8W F 0805	1	R36
024-270498-120ZS	GS SMD Resistor	2K7 1/8W J 0805 T	1	R64
024-300398-120ZS	GS SMD Resistor	300R 1/8W J 0805	1	R55
024-300598-120ZS	GS SMD Resistor	30K 1/8W J 0805 T	1	R56
024-330498-120ZS	GS SMD Resistor	3K3 1/8W J 0805 T	5	R12-15,59
024-332498-100ZS	GS SMD Resistor	3K32 1/8W F 0805	2	R26,27,
024-360498-120ZS	GS SMD Resistor	3K6 1/8W J 0805 T	1	R28
024-453598-100ZS	GS SMD Resistor	45K3 1/8W F 0805	1	R30
024-470598-120ZS	GS SMD Resistor	47K 1/8W J 0805 T	3	R44,47,49
024-470698-120ZS	GS SMD Resistor	470K 1/8W J 0805	1	R70
024-470798-120ZS	GS SMD Resistor	4M7 1/8W J 0805 T	1	R60
024-487498-100ZS	GS SMD Resistor	4K87 1/8W F 0805	2	R51,53
024-510398-120ZS	GS SMD Resistor	510R 1/8W J 0805	1	R57
024-560598-120ZS	GS SMD Resistor	56K 1/8W J 0805 T	1	R122
024-620398-100ZS	GS SMD Resistor	620R 1/8W F 0805	2	R16,18
024-680498-120ZS	GS SMD Resistor	6K8 1/8W J 0805 T	5	R46,40,41,43,42
024-680598-120ZS	GS SMD Resistor	68K 1/8W J 0805 T	4	R33,34,31,5
024-820598-120ZS	GS SMD Resistor	82K 1/8W J 0805 T	1	R69
024-330598-120ZS	GS SMD Resistor	33K 1/8W J 0805 T	2	R4,5
024-330498-120ZS	GS SMD Resistor	3K3 1/8W J 0805 T	2	R7,8
020-220497-120ZS	GS film resistor	2K2 1/4W J	1	R11
021-100401-120ZS	GS MOF resistor	1K 1W J Kink	1	R103
022-500003-020ZS	GS Resistor KNP	0R05 3WS J FK TYP	1	R104
024-100298-120ZS	GS SMD resistor	10R 1/8W J 0805 T	2	R81,82
024-100498-120ZS	GS SMD resistor	1K 1/8W J 0805 TA	8	R79,83,92,95,96,105,108,110
024-100598-120ZS	GS SMD resistor	10K 1/8W J 0805 T	19	R2,74,75,84,88,89,97,106,109,113-117,119, 120,138,139,141
024-100698-120ZS	GS SMD resistor	100K 1/8W J 0805	2	R3,112,
024-110598-100ZS	GS SMD resistor	11K 1/8W F 0805 T	1	R98
024-200598-120ZS	GS SMD resistor	20K 1/8W J 0805 T	1	R94
024-220398-120ZS	GS SMD resistor	220R 1/8W J 0805	1	R90
024-220498-121ZS	GS SMD resistor	2K2 1/8W J 0805 T	2	R1,87
024-220598-120ZS	GS SMD resistor	22K 1/8W J 0805 T	1	R118
024-220798-120ZS	GS SMD resistor	2M2 1/8W J 0805 T	1	R80
024-270498-120ZS	GS SMD resistor	2K7 1/8W J 0805 T	1	R73
024-390498-120ZS	GS SMD resistor	3K9 1/8W J 0805 T	1	R93
024-390598-120ZS	GS SMD resistor	39K 1/8W J 0805 T	1	R77
024-430498-100ZS	GS SMD resistor	4K3 1/8W F 0805 T	1	R78
024-470298-120ZS	GS SMD resistor	47R 1/8W J 0805 T	2	R101,102
024-470398-120ZS	GS SMD resistor	470R 1/8W J 0805	3	R76,99,100
024-470498-120ZS	GS SMD resistor	4K7 1/8W J 0805 T	2	R85,86
024-470598-120ZS	GS SMD resistor	47K 1/8W J 0805 T	1	R107
024-560498-120ZS	GS SMD resistor	5K6 1/8W J 0805 T	1	R140

Part number	Description		Qty	Reference Designator
024-680498-120ZS	GS SMD resistor	6K8 1/8W J 0805 T	1	R91
026-200595-269ZS	GS VR 20k x 2 CROSSOVER	PN:RD163121R03D-2	1	VR2
026-500495-005ZS	GS VR 5K LEVEL	PN:RD163111R22B-5	1	VR1
Semiconductors				
054-414803-100ZS	GS SMD DIODE	PN:LL4148 MINI-ME	15	D3,4,10~22
051-005600-100ZR	GR Transistor PNP	PN:MPSW56RLRAR TO	1	Q3
054-045580-100ZS	GS SMD IC:(Dual Op-amp)	PN:NJM4558M-TE3-*	1	U4
054-007200-100ZR	GR SMD IC (Dual Op-amp)	PN:TL072CDR SO-8	1	U5
050-505200-001ZS	GS LED	PN:LT-2402-21	1	
054-000100-100ZS	GS SMD DIODE	PN:ES1D 200V 1A	2	D38,39
054-008407-000ZR	GR SMD ZENER DIODE 15V, 0.35W	PN:BZX84C15-7-F S	3	D6,7,9
051-003100-000ZS	GS Transistor NPN	PN:TIP 31C TO-220	1	Q4
052-400080-000ZR	GR Bridge Rectifier	PN:RS804 400V,8A	1	BR1
054-540100-100ZR	GR SMD Transistor PNP	PN:MMBT5401 LT1 S	2	Q24,26
054-033904-100ZR	GR SMD Transistor	PN:MMBT3904LT1G S	5	Q5~9
054-007400-100ZR	GR SMD IC:(Quad Op-amp)	PN:TL074CDR	2	U2,3
054-011400-100ZR	GR SMD Transistor	PN:DTC114TKA SMT3	1	Q7
051-000600-100ZR	GR Transistor NPN	PN:MPSW06RLRA TO-	2	Q2,Q16
051-222200-100ZR	GR Transistor NPN (ON	PN:MPS2222ARLRAR	1	Q21
051-290700-100ZR	GR Transistor PNP (ON	PN:MPS2907A RLRAR	2	Q19,23
051-540101-000ZR	GR Transistor PNP(FAI	PN:2N5401 TO-92 T	1	Q1
051-555100-000ZR	GR Transistor NPN	PN:2N5551 TO-92 T	1	Q17
051-640001-000ZR	GR MOSFET N-Chann	PN:IRF640NPBF TO-	2	Q18,22
053-211100-000ZR	GR IC:DIP,DRIVER	PN:IR2111 8PIN (I	1	U7
054-000100-100ZS	GS SMD DIODE:	PN:ES1D 200V 1A T	4	D5,26,29,33
054-007200-100ZR	GR SMD IC (Dual Op-amp)	PN:TL072CDR SO-8	2	U6,8
054-008406-000ZR	GR SMD ZNR DIODE 10V 350MW	)PN:BZX84C10-7-F S	1	D35
054-008408-000ZR	GR SMD ZNR DIODE 5.6V 350MW	PN:BZX84C5V6-7-F	3	D24,36,37
054-033904-100ZR	GR SMD (TRANSISTOR)	PN:MMBT3904LT1G S	3	Q11,14,13
054-033906-100ZR	GR SMD Transistor (ON)	PN:MMBT3906LT1G S	3	Q10,12,15
054-414803-100ZS	GS SMD DIODE:	PN:LL4148 MINI-ME	10	D1,2,23,27,28,30-32,34,44
054-540100-100ZR	GR SMD Transistor PNP	PN:MMBT5401 LT1 S	3	Q20,24,26
054-555100-100ZR	GR SMD Transistor (NPN	PN:MMBT5551 LT1R	1	Q25
Capacitors				
039-100384-100ZR	GR Safety Capacitor 0u1/250V	PN:HQX0.1K275VACx	1	CXAC1
034-100525-300ZS	GS Elect. Cap.	10uF/25V M (R)051	1	C35
034-220525-301ZS	GS Elect. Cap.	22uF/25V M (R)5x1	4	C4,9,41,39,
031-100244-100ZS	GS SMD Ceramic cap.	0u01/50V K 0805 X 7R	3	C33,5,10
031-100343-100ZS	GS SMD Cap.	100pF/50V J 0805 NPO	2	C36,16
031-100344-100ZS	GS SMD Cap.	0u1/50V K 0805 X7R	1	C11
031-100384-100RZS	GS SMD Cap.	0u1/250V K 1206 X	2	C3,7
031-220344-100ZS	GS SMD Cap.	220pF/50V J 0805 NPO	4	C20,21,19,1
031-330444-300ZS	GS SMD Cap.	3300pF/50V K 0805 X7R	2	C40,34
034-220525-301ZS	GS Elect. Cap.	22uF/25V M (R)5x1	4	C4,9,41,39
034-330615-300ZS	GS Elect. Cap.	330uF/16V M (R)08	1	C12
034-330780-300ZR	GR Electrolytic cap. 85℃	3300uF/80V M (R)2	2	C6,8
034-470415-301ZS	GS Elect. Cap.	4u7/50V M (R)0511	1	C2
034-470515-200ZR	GR Electrolytic cap.	47uF/16V M (R)051	1	C37
038-100363-300ZR	GR MPE Cap. P:5	0u1/100V J	5	C26,27,28,29,30
038-150393-300ZR	GR MPECap. P:5	0u15/63V J	1	C25
038-330393-300ZR	GR MPE Cap. P:5	0u33/63V J	1	C31
032-100484-200ZS	GS END Mylar cap.	1uF/250V K P:15	1	C70B
031-100244-100ZS	GS SMD Ceramic cap.	0u01/50V K 0805 X	4	C45,51,66,67
031-100343-100ZS	GS SMD Cap.	100pF/50V J 0805	1	C58
031-100344-100ZS	GS SMD cap.	0u1/50V K 0805 X7	17	C42-44,46-49,52,54,55,60,63,71,74,77,82,81
031-470244-102ZS	GS SMD cap.	0u047/50V K 0805	2	C62,59
031-560243-100ZS	GS SMD cap.	56pF/50V J 0805 N	2	C57,61
031-560343-102ZS	GS SMD cap.	560pF/50V J 0805	1	C56
032-100484-200ZS	GS END Mylar cap.	1uF/250V K P:15	1	C70
033-470444-270ZS	GS NPE cap. 印ELYT	4u7/50V K10 (R)8x	1	C73
033-680464-270ZS	GS NPE cap.印ELYT	6u8/100V K10 (R)1	1	C72
034-100625-300ZS	GS Electrolytic cap.	100uF/25V M (R)6.	1	C64

Part number	Description		Qty	Reference Designator
034-220525-301ZS	GS Electrolytic cap.	22uF/25V M (R)5x1	2	C50,53
034-330525-300ZR	GR Electro. Cap.	33uF/25V M (R)051	1	C1
034-330615-300ZS	GS Electrolytic cap.	330uF/16V M (R)08	1	C78
034-470515-307ZR	GS Electrolytic cap. LOW ES	47uF/16V M (R)05	1	C65
038-100363-300ZR	GR MPE cap. P:5	0u1/100V J	2	C68,69
Miscellaneous				
041-115001-000ZR	GR BEAD COIL	PN:YT-10911	1	L5
043-300101-000ZR	GR INDUCTOR	PN:YT-10033 30uH	1	L2
043-560200-000ZR	GR INDUCTOR	56uH YT-10779	1	L1
043-700101-000ZR	GR TOROIDAL INDUC	70uH YT-10682	1	L3
025-010300-000ZR	GR Thermister	PN:NTSE103KZ072 K	1	TH1,
044-100100-000ZS	GS SMD FERRITE BE	PN:321611 600R/10	2	FB1,FB2
061-700044-000ZR	GR Mica	13x18mm TO-220 無	3	
063-010012-000ZR	GR Bracket for Transistor	P/N:TRK-1	4	
074-300018-000ZR	GR RELAY		1	
073-032315-601ZS	GS Heatsink		1	
072-040064-000ZR	GR Terminal (PCB TYPE)	PC250 (t=0.8m/m)		S+)
077-100102-100ZR	GR Connector	PN:JS-1001-02 P=2	1	CONN3A
	GR Terminal (PCB TYPE)	PC205 (t=0.8m/m)		S-)
043-324300-000ZR	GR INDUCTOR	324uH YT-10778	1	L4
MISCELLANEOUS/MECHANICAL				
061-020000-000ZS	GS Knob ABS HTS-1	φ20x15m/m UL94V-	2	Level, crossover
074-030002-000ZR	GR TOGGLE SW	PN:L101-T2B4QE (點	2	SW5,SW6
061-400014-000BZR	GR RUBBER FOOT	ID:6.2 OD:11.5 t=	4	for Transformer
072-040096-000ZR	GR T187MA(PCB	(t=0.8mm) PC187(0	7	AC1,AC3,T1,
086-021818-005ZR	GR Power Cord NIS	2L=1830mm 105C+T18	1	
093-105202-300ZR	GR FUSE:UL GSL(2A	FUSE:2A,250V,5*20	1	F1
072-060170-000ZR	GR B.P	Binding post set	2	BP/IP
073-050001-000ZS	GS FUSE CLIP	P/N:CT-FH1206	2	for F1
074-020018-000ZR	GR ROCKER SW (Power)	PN:RF1003-BB4-0	1	
072-010058-000ZR	RCA jacks	Dual	1	CONN1
042-010053-003ZR	GR Transformer, Main 120v	YT-10616-4	1	
063-321101-000ZR	Plastic Panel	322x105.7x15mm BL	1	
063-531808-000ZR	Plastic Bucket	322x105.7x146.5mm	1	
008-060303-042ZR	GR GASKET	25.4x25.4x38mmPOR	1	for X'former
008-061215-000ZR	GR GASKET C4305	12x15 t=5mm CR	1	for Thermister
008-062002-002ZR	GR GASKET (PB10/12)	PN:L-32 200x20mm	1	
008-062002-012ZR	GR GASKET (PB10/12)	200x20mm t=2mm CR	1	COVER底
008-063208-000ZR	GR GASKET C4305	321x8 t=1mm CR	2	COVERx2
008-069304-000ZR	GR GASKET C4305	93x4 t=1mm CR	2	COVERx2

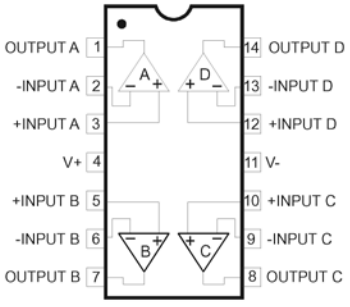

PCB VOLUME BOOSTER BOTTOM SIDE


ELYTONE (LIGHTION)
TSS1100 120V/230V REV:P1E
P/N:015-201206-103ZR
CAUTION: FOR CONTINUED PROTECTION
AGAINST RISK OF FIRE,REPLACE
WITH SAME TYPE OF FUSE.
ATTENTION: UTILISER UN
FUSIBLE DE RECHANGE
DE MEME TYPE.
T1.25AL FOR 230V
T2AL FOR 120V/100V
C13
C78
C1
Q1
C39
VR1
SW6
C31
K1
C41
C50
S+
L1
C73
C53
C30
SW5
CON3A1
C29
VR2
L2
C64
Q16
C28
C27
C24
C2A
C26
C23
C25
C1A
C22
S_
R103
C65
Q17
Q21
C72
Q23
Q19
R104
Q22
TH1
Q18
C
Q4
E
B
R11
L5
CON1
C35
C37
C38
C69
C68
C70
R10
C12
BP/IP
C9
C8
C6
AC2
C70B
R9A
Q3
R9
C4
C18
AC3
BR1
R6
Q2
R7A
C2
C17
AC1
CXAC1
L4
T1
SW4
SW2
T2
BP/OP

Integrated Circuit Diagrams

OPAMP, QUAD 14P TL074

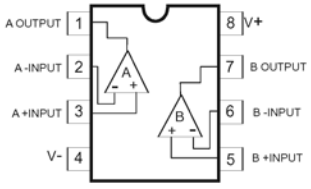
U2,3



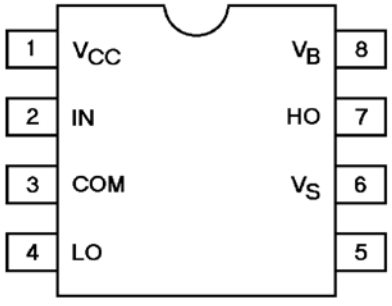
OPAMP, DUAL 8PIN

TL072, NJM4558M

U4,5,6,8

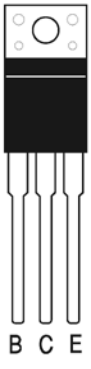


IR2111 U7



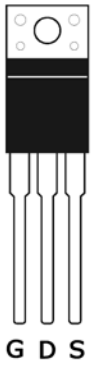
TRANS, NPN T0220

TIP31C Q4



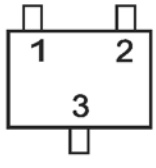
MOSFET, IRF640 T0220

Q18,22



* MMBT3904LTI SOT23,
* MMBT3906LTI SOT23,
DTC114TK SMT3
* MMBT5401 LTI

Q5-15,20,24,25,26

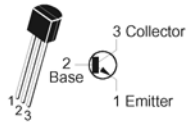


1) Emitter
2) Base
3) Collector

* PREFIX MAY BE "FMMT"

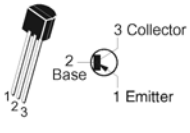
TRANS NPN MPSW06, MPS2222A, 2N5551

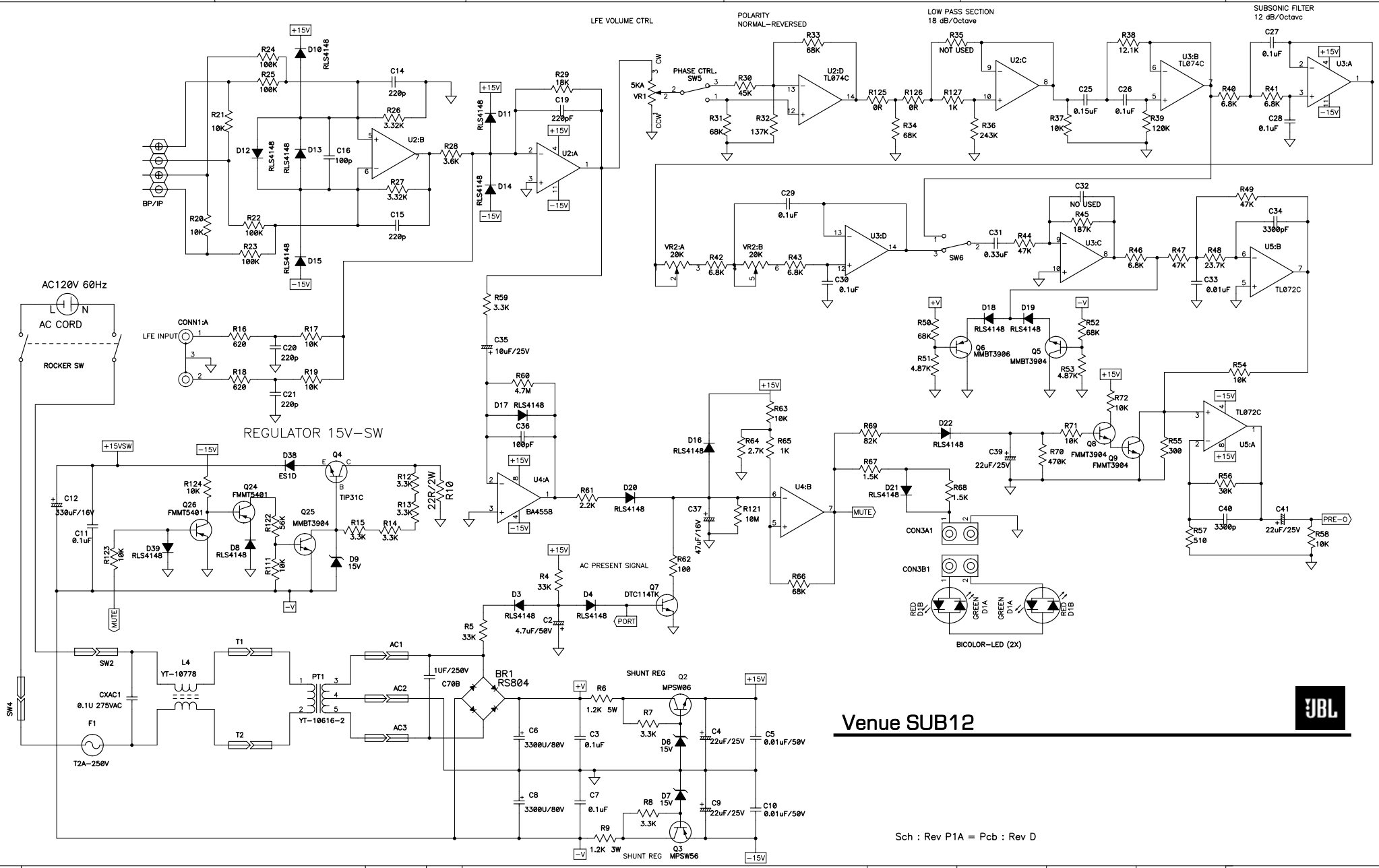
Q2,16,17,21



TRANS PNP MPSW56, MPS2709A, 2N5401

Q1,3,19,23





Venue SUB12

Sch : Rev P1A = Pcb : Rev D

Rev:	Notes:	Date:
P1A	NEW DESIGN	2006/06/15

Rev:	Notes:

Draw by	Designed by	Checked by

音律電子股份有限公司

JBL

VUNUE SUB 12 (120V)

PRE AMP PCB

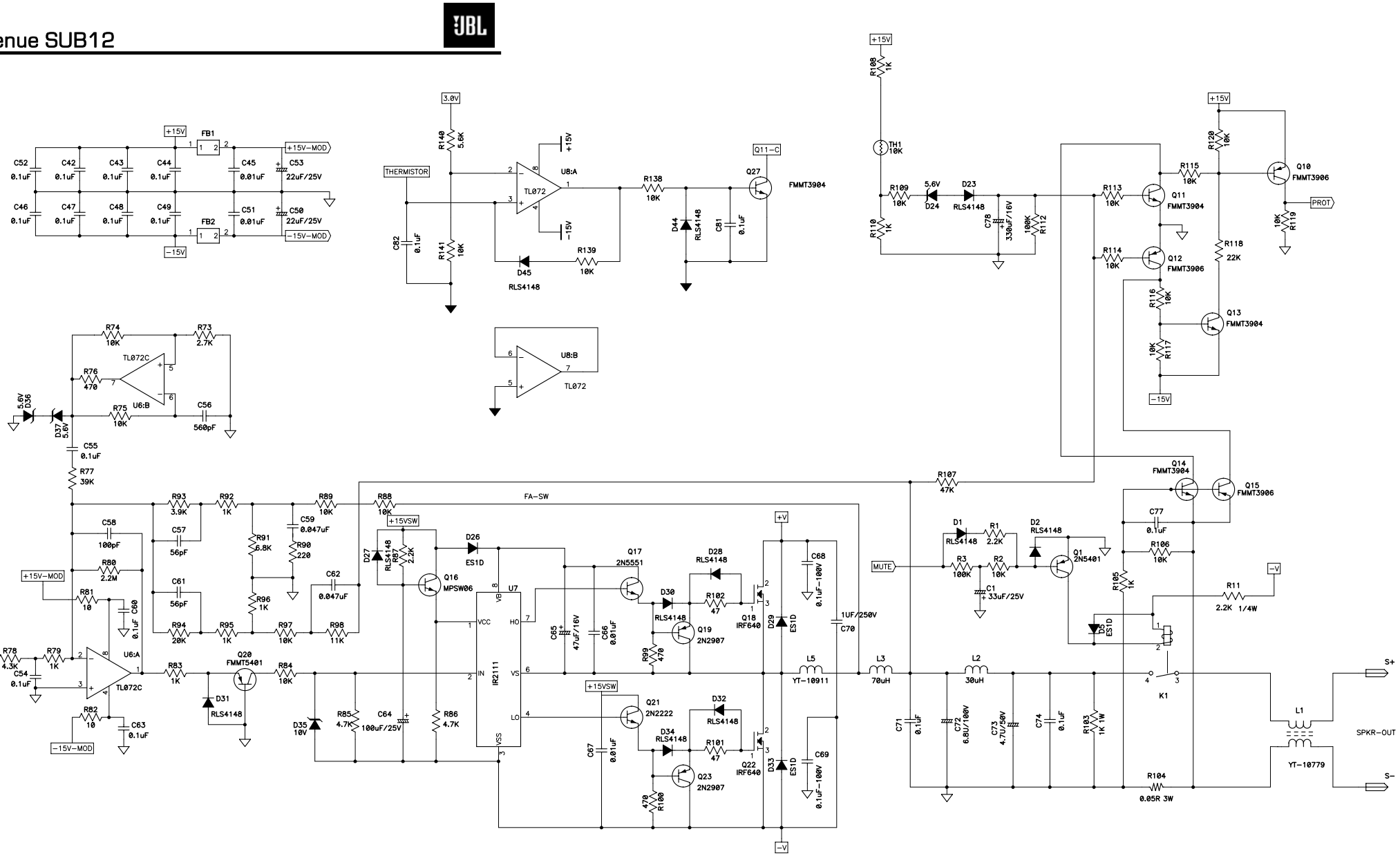
Issue no:

Date: 2006/06/15

Sheet: Rev: P1A

Author: GEORGE

Venue SUB12



Rev:	Notes:	Date:	Rev:	Notes:	Draw by	Designed by	Checked by	
P1A	NEW DESIGN	2006/06/15						

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VUNUE SUB 12 (120V)

POWER AMP PCB

Issue no:

Date: 2006/06/15

Sheet: Rev: P1A

Author: GEORGE